compound to produce the copolymer; and it can be made by combining a quantity of divalent metal compound, and a quantity of monovalent metal compound, such as sodium hydroxide, with an acrylic acid compound to produce the terpolymer. In this regard, the ratio of divalent metal compound to acrylic acid compound is an amount in the range of from about 0.15 to about 0.5 moles divalent metal compound per mole of acrylic acid compound, and the ratio of monovalent metal compound to acrylic acid compound is an amount in the range of from about 0.0 to about 0.5 moles monovalent metal compound per mole of acrylic acid compound. All of the acrylic acid compound is not converted to a metal salt thereof. (Disclosure, page 8, lines 169-177; Claims 12, 16)

The mentioned minimum ratio of divalent metal compound to acrylic acid compound is about 0.15 moles divalent metal compound per mole of acrylic acid compound. Thus, the resulting polymer composition must include a quantity of divalent metal salt of the acrylic acid compound, such as magnesium acrylate. Accordingly, the combination of polymeric elements in the resulting water soluble polymer composition of this invention, stated in stoichiometric terms (as seen in Formula 1), includes from about 0.65 to about 2.75 units of divalent metal salt of acrylic acid compound per unit of acrylic acid compound, and in the range of from 0 to about 2.25 units of monovalent metal salt of acrylic acid compound per unit of acrylic acid compound. (Disclosure page 6, line 133 to page 7, line 148; Claims 1, 14)

This invention still further provides a cross linked acrylic acid polymer which is water insoluble and stable at temperatures up to about 450°F. The cross linked acrylic acid polymer, a water insoluble gel, is made by reacting the water soluble polymer composition of this invention with a suitable cross linking agent. In this connection, Applicant discovered that the water insoluble gel will not form if the mole ratio of divalent metal compound to acrylic acid compound in the recipe for the water soluble polymer is less that about 0.15. (Disclosure page